



## RECENT FIRE LEGISLATION FOR LONDON

UNDER THE FACTORY AND WORKSHOP ACTS, 1895 & 1901; THE LONDON BUILDING ACT, 1894; AND THE LONDON BUILDING ACTS (AMENDMENT) ACT, 1905.

By WM. WOODWARD [F.].

Read before the Royal Institute of British Architects, Monday, 16th December 1907.

**I** SUPPOSE we shall be all agreed that no man knows better where the shoe pinches than he who wears the shoe, and nobody appreciates more fully the administration of an Act of Parliament than he who suffers, or believes he suffers, from a procedure which does not happen to fall in with his own view of what is right and what is wrong.

To bring the subject of my Paper out of the realms of mediævalism, and to treat it as one within the memory of living inhabitants, let us go back only to the days of the Metropolitan Board of Works, and call to mind the nature of the Acts in force in those days, how they were administered, and whether any dire calamity occurred from fire as the result of laxity or leniency on the part of the then administrators. I can well remember one or two great conflagrations which illumined and relieved the dull murkiness of a London atmosphere: the "Tooley Street fire," for example, which for days blazed, smouldered, and ultimately died out, "leaving not a wreck behind." It seemed, too, in my young days that the old parish "squirts," as I think they were called, "hand-pumped" as they were, and the more dignified "fire-engine"—a sort of "model" engine compared with that of to-day—were always "out," tearing about the streets and frightening nervous old ladies just as the fire-engine drivers delight in doing to-day. And yet I do not know that any very serious loss of life from fire occurred then compared with the then existing population. I am not old enough to have walked through the City, arm-in-arm with the great diarist Samuel Pepys, and to have watched and noted, with the piquant and charming detail characteristic of the embellishment of his "Diary," the ravages of the Great Fire of London, a fire the area of whose devastations would have been much diminished if there had been a greater absence of wood with a corresponding presence of party-walls. We shall find as we consider the various Acts of Parliament which have been passed with the object of securing greater immunity from loss of life and of property from fire in London that the prevention of the spread of fire has always been the guiding principle of legislation.

Horizontal and vertical divisions of fire-resisting materials, and means of escape in case of fire, have from time to time engaged the attention of Parliament and of municipal and controlling authorities. It is curious, too, to note—whilst I am on the subject of comparative absence of great loss of life from fire in London—that, notwithstanding the absence

of party-walls in the hundreds of groups of the old wooden picturesque cottages which we find scattered all over England, scarcely any loss of life from fire has occurred in them, and what has occurred has been almost always due to the occupants having partaken of a little too much of the good old English home-brewed concoction which cheered as well as inebriated.

I am quite aware of the great difference which existed as regards *cube contents* between buildings in London in the reign of Charles II., and in the country cottages I have referred to, and those structures which the demands of large commercial and industrial undertakings have created even since the genesis of the Metropolitan Board of Works. But with the advent of these large emporiums and warehouses modern invention has led to the introduction of materials and methods of protection from fire which vastly increase the opportunity for clearing a building of its inmates before the "devouring element" (as the penny-a-liner terms it) has had a chance of getting well hold of the structure. And I venture to assert that these considerations have not received the attention they deserve, either from the fire insurance companies or from the authorities administering the protective Acts of Parliament. Another point is that there does not appear to have been sufficient study given to what are and what are not the best fire-resisting materials. It is, I think, by no means certain that the hideous iron staircases which one sees outside large buildings in London would not prove delusions and snares in cases of big fires, even assuming one could get nervous persons to use these staircases at all; but the question at once arises, What sort of external staircase would you have which answers to the ease and lightness of construction of these modern iron staircases, with the addition of some approximation to beauty?

In the second schedule to the London Building Act, 1894, we find "granite and other stone considered as suitable for building purposes by reason of its solidity and durability." "Solid," no doubt, granite and other stones are, but as to their suitability or durability in the case of a big fire, I should say that we are relying upon a reed which soon breaks. In the same schedule—oak and teak in beams or posts or in combination with iron—the timber and the iron are required to be protected by plastering in cement or other incombustible or non-conducting external coating; and this provision is, to my mind—at least in the case of timber—quite unnecessary. One of the best supports to a building on fire is timber, and it requires no external covering of the nature described.

Then take that much-objected-to clause in the same schedule which demands staircases to be of oak or teak or other hard timber, with treads, strings, and risers not less than two inches thick. The idea of requiring a "wall string" to be two inches thick is going too far, and it is equally unnecessary to require doors to be 2 inches thick "in all parts." This 2 inches has been reduced to 1½ inches in the London Building Acts (Amendment) Act, 1905, but in nearly all other particulars as regards fire-resisting materials the Amendment Act has adopted the wording of the principal Act. In most cases the provision of "oak, teak, or other hard timber" is quite unnecessary; good, sound yellow deal or fir would be equally effective and sufficient in the case of fire.

I think that the question of preserving timber from the effects of fire is an important one, because if some undoubted *preservative* could be secured much cost and trouble would be saved in the means now adopted. A suggestion has been made that the surfaces of timber should be coated with silicate of soda and limewash, and Professor Abel specifies that a smooth and clean surface should be first obtained and then painted with a diluted solution of the silicate, then with slaked fat lime of the consistency of cream, then with a stronger solution of silicate.

The Act of 1894 was, on its passing, considered to be the last word in protective building legislation, and we now know how disadvantageous to building operations many of the clauses of that Act have proved to be.

In 1895 it occurred to our controlling authorities that, as regards *factories* something further, and special, was required to be done in connection with provisions for escape from fire. I believe I am only giving expression to what everyone in this room thinks when I say that prevention of loss of life from fire has been the honest basis of all legislation on this subject, whether that legislation has been initiated by the Metropolitan Board of Works, by the London County Council, or by Parliament; but we architects, builders, and building owners are naturally concerned to know, first, whether all the various clauses of the Acts are fair, necessary, and practicable; secondly, how they have been interpreted in the administration of them; and, thirdly, what injury has accrued to those brought within the purview of their requirements by curtailment of space, by interference with the economical working of business, and by financial loss occasioned by reduced value of premises and cost of carrying out the Council's requirements. We must, however, remember, at the same time, that what was thought *sanitarily* good enough fifty years ago is not so thought now, and the reduction in the death-rate in London proves the value of the alteration in our ideas; and so it must be as regards loss of life from *fire*: modern views must be obeyed, and all we have to do is to see that those views are carried into effect in a reasonable and practical manner.

In the Factory and Workshop Act, 1895, Section 10 provides for "movable fire-escapes"; but anyone who has had experience of such means of escape knows it sometimes occurs that the apparatus is out of order when wanted, and that the escapes are open to the remark that bodily injury sometimes occurs from their use, apart from the terror created when the inmates are full of excitement and desire to use them.

I quite admit that these inventions for getting out of burning buildings as rapidly as possible deserve every encouragement, and much depends upon simplicity and ease of working when they are brought into play. I was afforded the opportunity the other day of going over some of the premises of Messrs. Barker in Kensington High Street, and I was much struck with the evident care and anxiety on the part of the firm to make every possible provision for the rapid exit of their numerous employes in case of fire. Strong canvas shoots, easy of entry, and dropping into the street, are one of the means, and to these appliances the resident fireman, Mr. Bateman, has devoted much thought and skill, all in the important direction of simplicity and security. Fire buckets, ropes with loops for passing under the arms, and external staircases afford additional assistance, and there can be no doubt that for these canvas-shoots casements opening outwards are far better than double-hung sashes.

All of us have a natural horror of death from fire, and the more one sees of it the more one desires to control its spread. I was taken a few days back, by Mr. J. C. Stransom, of the London County Council, over the house No. 71 Commercial Road, Lambeth, in which a poor woman and child were recently burnt to death. The following is the type of that house, and of those, I am told, in which since 1st January 1906 twenty-seven lives have been lost and upwards of five hundred, more or less, seriously endangered. A small shop, with a room at the rear; passage to stairs leading to first and second floors; lath-and-plaster partitions, matchboarded in parts, and no way out to the roof. The London County Council are now requiring a partition to be put up at the top of these staircases forming a lobby over which is a trapway escape to the roof, and thence by iron fixed ladders, if required, to the roofs of adjoining premises. This is a simple and inexpensive requirement to which no reasonable objection could, I think, be raised. Had it existed at this house in Commercial Road no doubt the two lives would have been saved.

I do not know whether it is a fact or not, but it has always impressed itself upon me that fires occur in *cycles*—that they take place in groups at the same time, and that the winter months are those selected for conflagrations. The large fire at Gamage's, the other day, at the same time as other fires, brought this home to my mind, and I am sure we were all glad to know that no loss of life occurred there. This was, no doubt, due to the absence of panic, and to the fact that the fire occurred in daylight.

The Prince of Wales, appreciating the great importance of protection from loss of life by fire in hospitals, requested Sir Eyre Shaw and Captain Wells to draw up recommendations as to the best method of securing protection against fire in the various London hospitals, and these gentlemen have issued a report which appeared in *The Times* of the 27th ult. This report, it can be well understood, is valuable, and if the recommendations made in it are carefully complied with much greater chances of escape will ensue. The report directs attention to arrangements which should be made for summoning those who should be alarmed, and also to the necessity of means of immediately despatching information to the nearest fire brigade or police station—mentioning, for example, the telephone. Organisation, too, to stay "panic" is needed, so as to guide the patients to a place of safety. In a densely smoky atmosphere "wet flannel also over the face" is said to be beneficial. However, whatever the precautions are—and no doubt enormous good can be done by thought and organisation—no study can be more beneficial to mankind than that having for its object the prevention of loss of life by fire.

#### FACTORY AND WORKSHOP ACT, 1901.

In the Factory and Workshop Act, 1901, Section 14 operates on factories the construction of which was not commenced before the 1st January 1892, and in which more than forty persons are employed; and every workshop of which the construction was not commenced before the 1st January 1896, and in which more than forty persons are employed, must be furnished with a certificate from the District Council of the district (in London the London County Council) in which the factory or workshop is situate, that the factory or workshop is provided with such means of escape in case of fire for the persons employed therein as can reasonably be required under the circumstances of each case; and if the factory or workshop is not so furnished it shall be deemed not to be kept in conformity with this Act, and the certificate referred to must specify in detail the means of escape so provided.

Sub-section (2) of Section 14 requires every District Council from time to time to ascertain whether the aforesaid means of escape are provided, and, if not, to serve on the owner a notice specifying the measures necessary, and requiring him to carry them out before a specified date. This clause, it will be observed, gives a roving power to the Council, and the measures specified have given rise to much litigation, much heart-burning, and much cost. I well remember fighting, on more than one occasion, a requisition which was to my mind unnecessary and a very serious encroachment upon the ground-floor space of my client's premises. This was a passage-way about 3 feet wide, with a wall or fire-resisting partition extending from the rear right to the street, where a door had to be provided, and in one case the cost of providing a new staircase at the rear and the passage to the front would have amounted to about £1,500, apart from the loss of most valuable space. I urged that the inmates of the factory, having got down to the rear of the ground floor by means of the new staircase, could have as easily got to the street by running through the shop and out at the other door, as by being jammed together in the new passage-way. But the London County Council did not view the matter in that light. The result was that after a large consumption of time and money my client determined to send two of his workmen away (he had forty-one at the time); he thus reduced

the number to thirty-nine, and the London County Council had to leave the premises exactly as they were, and my client saved his £1,500.

Sub-section (3) of the same section gives power to arbitrate within one month after the time a difference arises between the owner and the Council.

Section 15 gives power to the Council to make by-laws providing for means of escape from fire in the case of any factory or workshop. "By-laws" are risky things, and become at times more exacting than the Acts themselves. They require careful watching and control.

Section 153, Sub-section (3), extends the powers of the London County Council under Section 164 of the London Building Act, 1894, with respect to the means of escape from fire in buildings exceeding 60 feet in height, to all factories and workshops, whether exceeding 60 feet in height or not.

A difficulty had arisen when a "factory" was in different occupations: the upper floors may have urgently needed means of escape in case of fire, which could only be provided by interfering with premises beneath, above, or surrounding, the owner of which not having forty persons employed was outside the Act, and would not allow any means of escape to pass through or interfere with his holding. The London County Council, experiencing this difficulty, have provided for it in the Amendment Act.

There are some provisions in the Act respecting the form of doors to be used in factories, and with reference to these and other special forms of door, whilst I agree that they should be made to open outwards, I think some of the fastenings specified might be much simplified.

The first schedule to the Act provides for arbitration between the owner of the factory or workshop on the one hand and the District Council or London County Council on the other hand, fourteen days being the time within which the arbitration is to be commenced.

#### THE LONDON BUILDING ACTS (AMENDMENT) ACT, 1905.

In 1903 the London County Council was again "seized," as the old saying is, with a desire for further powers to secure further means of escape in case of fire, and they brought in a Bill which so thoroughly alarmed the owners of property in London—including the City—that a thorough combination of effort to prevent the passing of the Bill was effected, with the result that that Bill was withdrawn. I must confess to some personal satisfaction that I was able to contribute somewhat to the withdrawal of that Bill. I may perhaps be permitted to mention that Mr. H. L. Florence and myself were engaged by the proprietors of eighteen of the most important of the hotels in London to consider the Bill with reference to the effect of it upon these hotel buildings, and in an exhaustive report which we made on 24th February 1903 we were able not only to point out the very serious mischief which might arise to these hotel buildings if the provisions of the Bill became law and were enforced; but to state that we had been pleased to find in most of the hotels many admirable precautions and safeguards existing for the escape of the inmates in case of fire, such as—

(1) Powerful pumps to raise water to the roofs of the highest hotels where storage cisterns of great capacity are placed to ensure due pressure of water.

(2) Fire hydrants on the various floors.

(3) Hand pumps, tanks on wheels, and fire pails on the various floors.

(4) Fire alarms, which bring to the different floors, in from one to two minutes, firemen and porters well trained to use the hydrants and hose.

(5) Emergency bells on each floor.



(6) Firemen who patrol the building every hour.

(7) Control or "tell-tale" clocks, which ensure the patrol of the firemen at night.

In addition to these precautions there is the fact that in hotels, night and day, there are always servants and staff men about on each floor, and that ready means of communication exist with the London County Council Fire Brigade.

There can be no doubt that the Bill of 1903 contained a large number of most important clauses which would have been beneficial to the public at large, and to building owners in particular; but at the same time there permeated the document a clear attempt, in my opinion, on the part of the London County Council to take such power as would enable them to enter every man's house, on fishing expeditions, to discover something to pull down or to require something to be put up. I conjured up an army of inspectors whose business it would have been, at the ratepayers' expense, to enter upon, what I termed at the time, "police excursions," which must have resulted in great interruption of business and enormous loss of money—all because of an innate desire on the part of the controlling authorities to improve the Metropolis at the expense of the individual, and to employ a Nasmyth hammer to crack a nut.

But the London County Council were not so easily set at rest; in 1904 they were "at it" again, and the result of their renewed activity is the London Building Acts (Amendment) Act of 1905, which is now in force.

On 4th December 1905, I at the request of the then President of the Institute (Mr. Belcher) read in this room a short Paper on this Act, which did not, for all practical purposes, come into force until 1st January 1906 (Section 7), and this as regards certain *new* buildings; and for the remainder it did not come into force until the 1st January 1907 (Section 9), and this as regards certain *old* buildings, being a retrospective clause, to which I personally take great exception. So that when I read my Paper in December 1905 we had had no experience of the working of the Act.

I, with many others, always fret and fume at what I term "grandmotherly legislation"; that was the burden of my song in 1905, and I suppose it will be to the end, but I "found salvation" in the fact that many of the provisions of the Act were referable to the Tribunal of Appeal, which remains as it is constituted under the Building Act of 1894.

In the discussion which took place on my Paper Mr. Douglass Mathews used some very sound words when he said that the special object of this Act was to "take means to prevent loss of life from fire, and not to wait until a fire occurred," and with that sentiment every one will cordially agree. The duty of the Fire Brigade is practically to provide means of escape from the *outside* of buildings; the duty of the London County Council to afford protection in the *insides* of buildings.

I concluded my Paper by observing that we must do the best we could with the Act now that it is law; that its success or failure depended very largely upon the manner in which it is to be administered, and that we should not condemn the administrators until they had had a fair trial. I added that if the officials who had to do the work would bring to bear upon the provisions of the Act sound common sense, and keep the spirit of the Act, rather than the letter, always before them, much trouble would be saved, and that fair and reasonable protection could be afforded quite as much by the practical exercise of common sense as by the exhibition of fads and fancies, which too often characterise constituted authorities; that we all trusted to the London County Council to administer the Act in a reasonable manner; that if they did, they would have the assistance and co-operation of all architects; if they did not, they must look forward to constant attempts at evasion and to bitter litigation which would neither protect lives nor advance the real interests of the biggest metropolis in the world.

It should be borne in mind that this Act of 1905 only became law after the Bill had received the most careful attention of a Select Committee of both Houses of Parliament, and it is very interesting to read the précis of the evidence given before those Committees, which is now published in the form of a Blue Book.

The Bill as originally deposited was a Bill for the general amendment of the London Building Acts, but before it came into Committee all of it was dropped except the one part relating to fire. The Bill was before the Committee of the House of Commons nineteen days, and before the Committee of the House of Lords four days. The Bill was strongly opposed, amongst the petitioners who appeared against it being the Corporation of London, the Royal Institute of British Architects, the Surveyors' Institution, the Institute of Builders, the District Surveyors' Association, &c.

Many of our professional brethren and members of the Institute gave evidence, amongst them being, for the promoters, Mr. W. E. Riley, Superintending Architect of Metropolitan Buildings and Architect to the London County Council; and, for the opponents, Mr. Edwin T. Hall, Mr. Thomas Henry Watson, Mr. Bernard Dicksee, Mr. Alexander Stenning, Colonel Eustace Balfour, Mr. E. W. Wimperis, the late Mr. H. H. Collins, and several large property owners.

It came out in evidence that the Factory and Workshop Act, 1901, which provided for means of escape for factories and workshops employing over *forty* persons, was found to be unsatisfactory on account of the limit of numbers, and the fact that very many premises could not be dealt with because the provision of satisfactory means of escape would involve trespass on intermediate holdings in the same building or on adjoining buildings. In this connection it should be mentioned that when the above Bill was promoted no fewer than nine hundred and eighty-nine factories reported as dangerous by the Home Office could not be dealt with by the London County Council because they did not come within the scope of existing Acts of Parliament.

It was found also that Section 61 of the London Building Act, 1894, which provided for means of escape to roof, was also unsatisfactory, as it could be easily evaded by not providing a parapet.

Section 63 of the 1894 Act was unsatisfactory, as it only provided for means of escape from the portions of buildings over sixty feet above the pavement level, whereas fire escapes only reach 55 feet, and even below that level life could only be saved very slowly by fire escapes.

All these questions came to an issue when the well-known fire occurred at Nos. 67 to 71 Queen Victoria Street in which ten persons lost their lives. This was a building in which 145 people were employed in the whole building, but only twenty in the portion used as a factory. At the inquest the coroner and jury recommended that the Building Act of 1894 should be amended so as to deal with cases of this kind.

The Home Secretary stated that the subject of safety from fire required early consideration, and in consequence of this representation it was decided to amend the legislation in such a way as to provide means of escape from all buildings in which more than *twenty* persons were accommodated.

The result of the legislation was the London Building Acts (Amendment) Act, 1905, and before devoting a little time to the consideration of the working of the Act up to the present time we will deal briefly with its main features.

Under Section 7 plans of new high and twenty-person buildings must be submitted to the Council, and certificates must be obtained, before the buildings are occupied. The administrators of the Act appear to aim at obtaining two separate means of escape from each part of

the building. In flats and tenements, &c., they have accepted, however, one staircase with self-closing fire-resisting doors for floors under 50 feet high, but they usually require some other means of escape from the floors above that level.

In buildings other than dwelling houses until recently a ventilated lobby has been required between the staircase and the room, but the Tribunal of Appeal have in three cases, viz. 13 and 15 Leather Lane, 1 and 2 Gracechurch Street, and 41 and 42 Beech Street, Barbican, in buildings under 1,000 feet superficial, upheld appeals against the provision of these lobbies. The Tribunal of Appeal stated, I understand, that they did not propose to decide a general principle as to whether these ventilated lobbies were or were not desirable in some cases, but that they were only dealing with the cases before them. Both from the Council's point of view and that of the public this appears to be regrettable, as, if they had settled the general principle, it would have been a good guide to architects as to what to provide in the future.

Two of these cases have been fought by Mr. Percy B. Tubbs, and in the case of Nos. 41 and 42 Beech Street, Barbican, the Tribunal of Appeal allowed the appeal of Mr. Tubbs, and awarded sixty guineas costs against the London County Council.

It appears that the principal objection raised by Mr. Tubbs was to the "smoke lobbies" which to many of us have been a sore bone of contention. Mr. Tubbs stated in his evidence (vide *The Builder*, 19th October 1907) that although he had put these lobbies in, in four or five cases, at the instance of the London County Council, he was no believer in them. He further stated that he had experimented on one of these smoke lobbies and found that the air was drawn into the room rather than the smoke being driven out of it, and that on opening the door leading to the staircase the smoke rushed up the staircase, and that it conclusively proved to him that the ventilators acted as inlet ventilators, and not as exhaust ventilators. It appeared also that the London County Council Committee were prepared to consider proposals of various alternative measures of escape, and one of them was a means of communication with adjoining buildings by means of ladders; but, unfortunately, the adjoining owners would not agree to these ladders being placed on their premises.

I think many in this room will heartily congratulate Mr. Tubbs on the success of his appeal, as there can be no question of the nuisance of these smoke lobbies in small buildings, besides which we have not yet had a single case in which a fire has occurred, and which would have conclusively proved their use or their failure. Another important point raised in this appeal is the fact that Mr. Tubbs could not get the consent of the adjoining owners to the proposed ladders. These ladders afford an inexpensive and satisfactory means of escape on to the roofs of adjoining houses, and I pointed out the weakness of the Act when I read my Paper here—that whilst provisions were made for escape by roofs, no power was conferred to compel adjoining and recalcitrant owners to consent to ladders giving access to their premises. This omission is inconceivable, but there it is until it is supplied by another Amendment Act. I cannot myself understand the objections being raised, as these ladders are sauce for the goose and ditto for the gander.

Since Mr. Tubbs's appeal was allowed the Building Act Committee of the London County Council have issued the following report, viz. (vide *The Builder*, 16th November 1907):

"Since the coming into operation of the London Building Acts (Amendment) Act, 1905, appeals have been made to the Tribunal of Appeal against the Council's requirements for the provision of ventilated lobbies to staircases in certain cases.

"The decisions of the Tribunal of Appeal in these cases have made it necessary for us to reconsider the practice of the Council in similar cases arising under Sections 7 and 9 of the Act. Hitherto it has been the practice to require as an alternative to secondary means of escape ventilated lobbies to staircases in order to prevent smoke logging. The Tribunal



of Appeal has definitely declined to lay down a general rule, but in the three above-mentioned cases it has decided that an enclosed fire-resisting or incombustible staircase with means of escape to and from the roof is sufficient for the purposes of the Act. We have therefore determined that in similar cases such means of escape only shall be required."

Under Section 9 of the Act the Council may make requisitions with regard to existing high and twenty-person buildings, and the same principles are adopted as for new buildings, but the existing means of escape are, where possible, made use of. It is considered desirable that architects when altering buildings should obtain the Council's views with regard to means of escape, so as to embody the suggestions with other alterations.

Under Section 10 projecting shops are required to be provided with a fire-resisting roof and other details, but the Council have large powers of exemption. The Council have given publicity to these powers, and have made liberal use of them. In the majority of cases exemption is granted from the larger works laid down by the Act, on condition that some smaller works, such as providing a screen to protect the roof access, are carried out. One of the advantages of this, from the owner's point of view (in addition to the reduced cost), is that the shop is not disturbed during alterations.

Section 11 deals with buildings used for the storage of inflammable liquids, and the Council are required to provide for protection against spread of fire as well as means of escape. The usual effect of the Council's requisitions is that the owners place the oil-tanks, &c., outside the main building, and convey the oil by a pipe to the shop for the purposes of service.

Section 12, which provides for access to roof, is not altogether satisfactory, as it is necessary to protect the access to roof before it can be considered satisfactory.

#### EXEMPTIONS FROM THE LONDON BUILDING ACTS (AMENDMENT) ACT.

The Amendment Act does not apply to buildings which are wholly in one occupation, as a factory or workshop, in which there are more than forty persons employed. (*Vide* Section 26, Sub-section (1).)

Whenever I have had an opportunity of discussing an Act of Parliament relating to buildings I have always protested against "exemptions," and this Amendment Act may be said to teem with them. Why should certain buildings belonging to a dock company, or to a railway company, or to an electric lighting company, or to a gas company, or to banks and insurance offices, or to the Stock Exchange buildings, be exempted from provisions for means of escape from fire? Is a bank or insurance clerk's life of such little moment that he may under certain circumstances be legally permitted to be consumed in his office, whilst a factory or workshop hand shall be safely led out into the open air and into the arms of his delighted family? And so with the thousands of employes of the companies I have above named. The "exemptions," however, become more serious the more we note them. The Royal Albert Hall, for instance, is exempted. I know the Albert Hall very well, but I really cannot understand why it should be specially singled out for exemption, unless it comes, as it may do, under some provision of some other Act. Again, the Lord Mayor and his *entourage* may be legally consumed in the Mansion House, and all other citizens using the Guildhall and the Royal Exchange must look after themselves.

I pointed out when reading my previous Paper the only piece of real humour I had detected in the Amendment Act. Section 28 euphemistically exempts the lands and buildings of the Honourable Societies respectively of the Inner and Middle Temple, Lincoln's Inn, and Gray's Inn from the operation of the Act under the marginal heading of "Protection of Inns

of Court." Now this Amendment Act has been drafted by lawyers and minutely considered by lawyers, and they have undoubtedly arrived at the conclusion that if they could get exempted from the provisions of an Act drawn to facilitate escape in case of fire they would, as human beings, be "protected." Fortunately a fire has not, so far as I know, occurred in either of these Inns since the Amendment Act came into force; but considering the age and character of many of the buildings referred to, I venture to think, and to lament, that if a serious fire did occur the legal element of this country would be depleted, and the complaints of an overcrowded profession cease to have meaning! And why should the lawyers of Staple Inn be "protected," as they are under Section 34, Sub-section (2), by being included within the provisions of that section? Are they better men, as citizens, or is it that the great lawyers of the other Inns really desire their extinction? There I must leave this very engrossing topic.

#### THE MACHINERY AND WORKING OF THE AMENDMENT ACT.

It must be confessed that up to the present time little just cause of complaint has arisen from the operation of the Amendment Act, and with the exception of the three cases previously mentioned *re* smoke lobbies I have not heard of any applications to the Tribunal of Appeal under the Act. It may be useful now to summarise the machinery by which the Act works.

#### "HIGH" AND "NEW" "TWENTY-PERSON" BUILDINGS.

A "high" building means (Section 6, Sub-section iv.) any building any story whereof is an upper story; and "upper story" means "any story the level of the upper surface of the floor whereof is at a greater height than fifty feet above the level of the footway (if any) immediately in front of the centre of the face of the building in which such story is situate."

A "new" building means (Section 6, Sub-section v.) "any building the actual erection of which above the footings shall not have been *bona fide* and substantially commenced at the date of the commencement of this Act, or which has been taken down, burnt, or destroyed for more than one half of its cubical extent and re-erected or commenced to be re-erected after such date, or of which the cubical extent has been increased after such date, by an amount equal to the cubical extent of the building as existing before such increase, and any existing building which by reason of any alteration thereof or addition thereto becomes a high building after such date."

A "twenty-person" building means (Section 7, Sub-section (6)) "a building in which sleeping accommodation is provided for more than twenty persons, or which is occupied by more than twenty persons, or in which more than twenty persons are employed, or which is constructed or adapted for the employment therein of more than twenty persons."

The "owner" means (Section 6, Sub-section (1)) "the person for the time being receiving the rack rent of the premises in connection with which the said expression is used, whether on his own account or as agent or trustee for any other person, or who would so receive the same if such premises were let at a rack rent."

And "rack rent" means (Section 6, Sub-section (11)) "rent which is not less than two-thirds of the full annual value of the premises out of which the rent arises."

A. *As regards the Owner.*—(1) The owner must submit his plans, so far as the means of escape are concerned, to the Council before commencing a new building which is a high building or a twenty-person building. This enables the owner to arrange his building plans at the earliest possible stage, so that alterations will not be necessary later on. The owner

may find a difficulty, in the case of a speculative building, in indicating exactly what will be the ultimate plan of the building. The owner, however, can readily indicate what he is prepared to provide as means of escape on the assumption of a normal or assumed occupation, leaving the question of exceptional occupation to be dealt with by a supplementary application to the Council when the exact occupation has been ascertained. The Tribunal of Appeal, in the case of 1 and 2 Gracechurch Street (vide *The Builder* of 3rd August 1907), adjudicated upon a case in which the owner had deliberately refrained from complying with the obligation upon him to deposit the plans with the Council, but put up the building and then defied the Council. The Tribunal decided in favour of the owner in spite of protest on the part of the Council's legal advisers on a legal issue. It seems unreasonable that the owner should have the advantages of an appeal when he has not fulfilled his statutory obligations by submitting his plans prior to the work being commenced. (2) The owner must not let or occupy before getting the Council's certificate (Section 7, Sub-section (2)). This is reasonable, as it prevents an unscrupulous owner from introducing an unwary tenant into his building before it has been rendered safe in the case of fire, or of shifting his obligations upon him. (3) The owner must give notice to the Council (under Section 7, Sub-section (3)) when substantial alterations are made in a certified building, so that the Council may express an opinion whether the alterations prejudice the means of escape.

B. *As regards the Council.*—The Council are bound to approve or disapprove the plans in a month, and it must be admitted that this in some cases represents a heavy burden upon the Council. For example, for such a large and complicated building as the Piccadilly Hotel a month is hardly sufficient to consider, report upon, and inform an applicant whether his proposed building will be satisfactory on the question of means of escape in case of fire, and in that particular case the architects have no reason to grumble at the time taken by the Council for the consideration of the various plans.

C. *As regards the Tribunal of Appeal.*—The public will no doubt draw their own conclusions from the fact that out of the large number of cases of new buildings which the Council must have dealt with, in only three, so far as I know, have the Council's decisions been appealed against. The case of Gracechurch Street, referred to above, ought, on the face of it, not to have been adjudicated upon, and we shall all agree that it would be most useful and desirable if the Tribunal, wherever possible, would give a definite ruling as to what they were prepared to certify as reasonable in buildings of the character before them. For example: their definite decision that smoke lobbies were not necessary in any building would have been most valuable to architects; but as the matter now stands the decision of the Tribunal only refers to similar buildings to those upon which they adjudicated, and further litigation may arise if the Council still require what they consider reasonable in similar cases. Architects are not even now certain that their plans will be passed if these smoke lobbies are omitted. It must be borne in mind that the report of the Building Act Committee *re* Smoke Lobbies, to which I have referred, only refers to "similar cases" in which an alternative to the lobbies will be sanctioned. "Smoke logging" is not yet dead, it is only "scotched."

D. *As regards the Practice of the Council.*—The Council have issued a statement of what they consider desirable as means of escape in various classes of buildings. This statement indicates generally that in small buildings one good staircase must be provided. In large buildings two staircases or two exits from each floor must be provided. The question as to the character of the staircase in small buildings was the main subject of the appeals referred to above. The Council concluded that it was not reasonable to consider a building safe in the event of fire where the only exit was by way of a staircase with doorways opening directly

on to it from rooms used as showrooms, offices, shops, and storerooms, in any of which a fire might arise and enter the staircase through the doorways, and render it very rapidly unavailable for escape up or down. The Council asked in such cases for at least a lobby or small corridor between the rooms and the staircase, so that in the event of fire in one of the rooms there would not be an immediate attack upon the staircase. It seems reasonable to conclude that the Amendment Act of 1905 involves that something should be done in addition to what would have been done in the ordinary way prior to the passing of the Act. Upon the assumption that a single ordinary staircase is not a safe exit in case of fire, the alternative to the lobby appears to be a second exit—which, of course, in the majority of small cases, would be an impossibility from the owner's point of view.

#### THE CUBICAL EXTENT OF BUILDINGS.

Section 5, Sub-section (24), of the London Building Act, 1894, defines "cubical extent," as applied to the measurement of a building, to mean the space contained within the external surfaces of its walls and roof and the upper surface of the floor of its lowest story.

Section 5, Sub-section (28), defines a building of the "warehouse class" as a warehouse, factory, manufactory, brewery, or distillery, and any other building exceeding in cubical extent 150,000 cubic feet, which is neither a public building nor a domestic building.

Under Section 75 no building of the warehouse class is to extend to more than 250,000 cubic feet unless divided by party-walls in such manner that no division thereof extends to more than 250,000 cubic feet; but under Section 76, where the Council are satisfied on the report of the superintending architect and of the chief officer of the Fire Brigade that additional cubical extent is necessary for any building to be used for any trade or manufacture, and are satisfied that proper arrangements have been or will be made and maintained for lessening, so far as reasonably practical, danger from fire, the Council may consent to such building containing not more than 450,000 cubic feet, provided that the building is divided by party-walls in such manner that the cubical extent of each division does not exceed the 450,000 feet. The building must further not exceed 60 feet in height, and must not be used for the purpose of any trade or manufacture involving the use of explosive or inflammable materials.

Section 77 gives rules as to the uniting of buildings, and states that an opening shall not be made in any party-wall or in two external walls dividing buildings which if taken together would extend to more than 250,000 cubic feet. The opening is not to exceed 7 feet in width or 8 feet in height, and is to have the floor, jambs, and head formed of brick, stone, or iron, and be closed by two wrought-iron doors, each a quarter of an inch thick in the panel, at a distance from each other of the full thickness of the wall, &c.

We all know the difficulties which have been created by these cubical extent clauses, and that even since 1894 trades have been opened up which have been much hampered in their uses and developments by the fact that the Council have no power to allow more than 450,000 cubic feet without these obstructive party-walls, and these equally obstructive iron doors. Drapery establishments, engineering works, and motor-car works and showrooms are three trades which at once occur to me, and no doubt there are many others.

There can be no doubt that the Council have themselves seen how detrimental these provisions have been to modern ideas of large areas for modern buildings, but a section of the Council have also had in mind the risk of serious conflagrations when such large buildings are not subdivided by party-walls. The chief officer of the Fire Brigade has also impressed upon the Council that if these large undivided buildings are permitted the strength

of the Brigade will have to be very considerably augmented to cope with the increased danger from fire.

The Council have now determined, I believe, to apply to Parliament in the session of 1908 for power to amend the Building Act of 1894, as regards the cubical extent of buildings, in the following manner—viz.—

(1) Section 75 to be amended so as to enable the Council to allow horizontal separation.

(2) Section 76 to be amended so as to remove all restrictions on the Council's power to allow increased cubical capacity for buildings of the warehouse class.

(3) Section 77 to be amended on the lines laid down in the London Building Acts (Amendment) Act, 1905, so as to give the Council discretionary power with regard to openings in party-walls, the provision of fire-resisting doors constructed of materials other than iron, and the uniting of buildings.

I think we in this room and the public generally would be very glad to hear that the Act of 1894 had been amended in the direction indicated above. Personally I think the views of the Fire Brigade are a little too pessimistic, although, of course, nobody knows better than the Brigade the difficulties attending putting out fires in the different classes of buildings with which they have to deal; but I do not think sufficient note is taken of the vastly superior character of construction which now obtains in our large buildings, the excellent appliances provided by the owners for dealing with outbreaks prior to the arrival of the Brigade men, and the comparatively rare occurrence of loss of life from fire in these large well-built and well-looked-after structures. The taking of power to allow horizontal separation as well as vertical is most important, and the wiping away of the vexatious restrictions now in force as to the size of openings in party-walls and the iron doors therein is mightily to be wished. What does it matter whether an opening is 9 or 10 feet wide or 9 or 10 feet high, or any other required size? But here we are tied down by the Act to the 7 feet and 8 feet as if those dimensions had been ascertained by some god-like scientist as figures the alteration of which by one inch would involve the roasting to death of any number of persons who would otherwise have escaped into the street.

We do not want to be confined so much to 10-inch treads and 7½-inch risers; we object to being restricted to fifteen steps in a flight, and requirements as to exact character of doors, &c., are sometimes inopportune. We want elasticity, more elasticity, and still more elasticity, and I believe we shall ultimately get it.

#### CONCLUSIONS.

I am one of those individuals who when discussing a "Bill" like to fight to the bitter end any clause which appears to be unreasonable or unnecessarily exacting; but when the Bill becomes an "Act" there is little left but to pay decent respect to its provisions and to endeavour to get those provisions interpreted in a fair and reasonable manner, both as regards the letter and the spirit of the Act. This particular Amendment Act gives considerable latitude to the Council, and in practice it will be found, I think, quite reasonable to ease off some of its provisions. I should have liked to have seen omitted in the Factory and Workshop Acts, and in this Amendment Act, all such hard-and-fast words as "forty persons" and "twenty persons," as these specific provisions only induce evasion if compliance is costly or difficult. I would leave each case to be dealt with by the Council entirely on its merits, and if the reply to that is that favouritism might result, or that it would be undesirable to place such great power in the hands of the Council, my retort to that is, that as in everything else, injustice finds its level; and as in our Courts of Justice all decisions are subject to



appeal, it might be desirable to give power to leave every decision to a Tribunal of Appeal. No person would take advantage of this opportunity unless he thought he had a good case, because the costs of his action would be a sufficient deterrent. It is true that the Council's costs are paid by the ratepayers, and that makes all the difference.

I think the 9-inch newel wall to a staircase might be omitted in many instances; I think the smoke lobbies might be omitted altogether; I think the thickness of a wall string might be less than  $1\frac{1}{4}$  inches; I think the thickness of the panels of doors might also be less than  $1\frac{1}{4}$  inches; I think the reduction of height in buildings from 60 feet to 50 feet unnecessary, as I thoroughly believe the London Fire Brigade appliances perfectly able to rescue persons from a burning building at a greater height than 50 feet; if they are not, then the London County Council must send abroad to obtain particulars which I know they are not in need of. I am glad to see the elastic way in which the London County Council is dealing with projecting shops—that item in the Amendment Act which caused such tribulation. I hope the London County Council will modify all their requirements in the way of ventilating areas, including, of course, the vexatious trunks inside, and gratings in the fronts of buildings to take air into those areas—requirements, to my mind, quite unnecessary and entailing great vexation and expenditure. I should rely a little more on the ability to get out of a building on fire before that fire got a hold—as in the case of Gamage's—but I would not stop short in any house in London in insisting upon a way out to the roof, and, having got there, a way on to adjoining premises.

I hope I have dealt fairly with these very important provisions for protection of life from fire, and with the means of escape when the fire occurs. I have written the Paper with due regard to the great responsibilities of, and to the views naturally entertained by, the London County Council. I believe that if the parties on both sides approach the provisions of the Act with common sense and with a sincere desire to do what is right, fair, and reasonable, the pessimistic views with which I and others regarded the "Bill" will give place to brilliant optimism and satisfaction. We must bear in mind the great powers placed in the hands of the Council, who must in their turn remember the very small proportion of deaths by fire in London. We do not need, as I have said, a Nasmyth hammer to crack a nut, and as the wheels of the gods move slowly but surely, so should the wheels of the London Building Acts (Amendment) Act move slowly, cautiously, and fairly. One final word. When the proposed Amendment Bill to the Building Act of 1894 is being drafted, and when any other Bill on any other subject in this world is being drafted, may some kind and watchful angel sit up aloft over the shoulders of the draughtsman and *make him punctuate every sentence!*

---

## DISCUSSION ON THE FOREGOING PAPER.

MR. EDWIN T. HALL, *Vice-President*, in the Chair.

MR. J. DOUGLASS MATHEWS [F.], in proposing a vote of thanks to Mr. Woodward, said that he was in general agreement with all that he had brought forward in his Paper. He had dwelt very much on the question of smoke lobbies, and he (Mr. Mathews) was very glad to know that the County Council had seen the desirability of not pressing this requirement any further. He himself had taken part in the three appeal cases, and had studied the question in every possible light, but he could not convince himself as to the necessity or reasonableness of these smoke lobbies. When he mentioned the word "reasonable," he thought the Institute was entitled to a great deal of credit for having got the word "reasonable" introduced. That word was not in the Bill in the first instance, but it was shown that its introduction would be of great value. Another suggestion the Institute made was that in all cases where the County Council had discretion it should be subject to appeal to the Tribunal of Appeal. The Amendment Act was a very important measure, and one in which differences of opinion must necessarily arise, not so much as to the principle, but as to carrying it out. Mr. Woodward in his summing-up had mentioned that he considered every house ought to be provided with a means of escape to the roof. Probably there was nothing more difficult than that. In the case of an ordinary semi-detached dwelling house means of escape might be gained by access being given from the roof of one house to another, but if one took an ordinary detached dwelling house without parapets, then it became a very difficult matter. One of the chief difficulties was that, supposing some kind of protection was put up in front of the trap door, or dormer, as a guard, it might lead to sad consequences, because a person had not simply to get on to the flat or landing, but he would have to climb over the obstruction before he could get within touch of the fire escape. This was one of the details that necessarily present themselves, and unless the means of escape was very simple and easy for use, it became a trap rather than an advantage. He agreed with Mr. Woodward in thinking that the County Council were taking an elastic view of things. It was a very difficult matter for a body like the London County Council, which was charged with the supervision of the means of escape from fire in every building in London, to take upon itself the great responsibility that this duty entailed. He could not help thinking that it would much simplify matters, as far as the Council were concerned, if they made suggestions to the owners

to do certain things, and put the onus of the responsibility upon them. That would save a great deal of trouble, because it would throw a responsibility upon the owners, which they themselves would not feel disposed to accept. As things were at present, supposing that the requirements had not been pressed upon the owners and enforced by the County Council, they might say at once, "We have heard no more of it and have done nothing," and would shelter themselves under the inaction of the County Council. He agreed with Mr. Woodward that grandmotherly legislation was undesirable, and he thought that if the public were treated as sensible beings a great deal might be done without the pressure and enforcement of a public body. He had much pleasure in proposing a hearty vote of thanks to Mr. Woodward for his very excellent Paper, and he trusted it would result beneficially to the inhabitants of London generally.

MR. W. E. RILEY [F.], Superintending Architect of Metropolitan Buildings and Architect of the London County Council, said that they could all heartily second the vote of thanks so ably proposed by Mr. Mathews, and compliment Mr. Woodward upon the temperate tone of his Paper. The Paper was not free from humour—indeed, they would not like to hear a Paper from Mr. Woodward which was free from humour—he doubted even if he could give one. Fire, however, in buildings, and especially in domestic buildings, was a tragic question, and it needed the care and consideration which the able exponent of the subject had given it. He could not help being struck in the Committee-rooms of the House of Commons and the House of Lords, when this Bill for the amendment of the Act of 1894 was before those Committees, with the monotonous sameness of the testimony of every witness, whether for the Bill or against it, that something was necessary to be done. When those who were inclined to criticise the original clauses and proposals of the Bill came with nostrums and remedies for the defects which existed, nothing impressed him more than their final recognition of the fact that nothing which tended to save life in case of fire should be neglected. That indeed was the crux of the question: what provision should be made in a reasonable and practical manner to save life in case of fire. He was glad to see that there was no disposition to charge those responsible for the administration of the Amendment Act with the iron inflexibility which had been so much spoken of in the past. The Building Act of 1894 contained many positive and decisive clauses which gave the County Council and those responsible under it no

power to override the actual wording of the various clauses. That was possibly the reason why the Act was so unpopular. It was doubtless very easy to discharge another man's responsibility, especially when the consequences were left with the owner of the responsibility. He did not wish to weary them with statistics, but there were a few which he thought they ought to be possessed of. Everyone knew that the 1905 Act was due to the dreadful fire in Queen Victoria Street in June 1902. It would be remembered that the jury added a rider to their verdict saying that the Building Act of 1894 needed amendment in the direction in which that fire gave experience. The Home Office had just previously amended their Factory Acts, but the very first case tested under the Amendment proved it to be useless for its purpose. The Home Office made representations that the Building Act of 1894 was the Act which needed amendment. There were many fires previous to the promotion of the Bill which had great influence on the trend of the clauses. There were some which dictated the requirements with regard to domestic buildings over shops and premises of that character. From 1890 to 1904 there was a gruesome list of deaths. In November 1890 there was a fire in Cloth Fair which proved fatal to eight persons. In June 1896, at 187 Mare Street, Hackney, four persons lost their lives: that was an oil store. In December 1898, at 27 Clerkenwell Road, one life was lost: that was a twenty-person building, and would come under Section 9 of the Amendment Act. In November 1901, at 127 Judd Street, three persons lost their lives: that was an oil store. In April 1902, at 423 Hackney Road, seven lives were lost: that was a projecting shop. In June 1902, at 67 to 71 Queen Victoria Street, ten lives were lost: that was a twenty-person building, but it did not come under the Factory Act. In November 1902, at 72 Royal Mint Street, three lives were lost: that was a twenty-person building, and would come under Clause 9. In December 1902, at 25 Ben Jonson Road, six lives were lost: that was a projecting shop. In October 1903, at 386 Hackney Road, three lives were lost in a projecting shop. In February 1904, at 3 Duke's Head Passage, seven lives were lost: that would be a Section 9 building. And again, in October 1904, at 107 Judd Street, six lives were lost in a twenty-person building. The tale of these was fifty-eight. Then since the Act came into operation—and he had watched the statistics very closely—since 1st January 1906 twenty-seven lives had been lost in buildings coming within Sections 9, 10, and 12 of the Amendment Act, and 510 lives had been seriously endangered. Two hundred and sixty-eight out of the 510 left the buildings by other methods than by the ordinary means of escape; that is, they were either taken out by the fire escapes, by ladders, or they got out of the building by other means. It would be well that it should be known what the

Council had done in the past in these matters. Since they had had power, the Council had dealt with 400 theatres, music-halls, concert halls, and similarly licensed buildings. Then about 200 similar kinds of buildings had dropped their licences, after they had been dealt with. The Council had dealt with 400 common lodging-houses, 1,500 factories, and 150 buildings 60 feet high, the latter under Section 63 of the Act of 1894, and he was prepared to say that in none of the foregoing cases had a single life been lost by fire. In that list there were 2,250 buildings. He might give them one or two details of the experience obtained in factories dealt with under the Factory Act in which fires had occurred. Take, for instance, the case of the Incandescent Light Company at Westminster on the 20th May 1902, in which 100 men and 500 girls were employed. They all knew the extremely inflammable trade of incandescent mantle making; yet every one of the persons employed managed to leave the building without the slightest injury. At Hatcham Saw Mills, in December 1904, 150 persons left by means of the escape provided. At 11 to 15 Pownall Road on the 14th September 1906 ninety persons were in the building. At Lipton's, in Cayton Street, on the 17th September 1906, 250 persons left by means of the stairs provided. At 70 Old Street, on the 17th January 1907, forty persons left the blazing building without damage to themselves; and at Woodfield Road, Paddington, on the 4th November 1907, 150 persons escaped uninjured.

Mr. SEAGER: May I inquire whether this was by means of the outside staircases?

Mr. RILEY: By the means of escape provided; most of them had internal staircases. He should also refer to the letter recently sent to *The Times* by Sir Eyre Massey Shaw and Captain Wells in their report on hospitals. In that letter they suggested that the means of escape generally employed were the kinds of escape which should be expected in hospitals. From the small experience he had had of hospitals—and he had been asked by the Council to advise on several—he thought a hospital was an extremely dangerous building unless sufficient means of escape were provided. The poor, helpless patients lay there in bed, and must be carried out on stretchers, and unless very easy-going staircases were provided, the difficulty was increased. He thought that slopes of a fair inclination would be a great deal better in hospitals. He should like to say one or two words on the ventilating lobby question. This question had been a great difficulty to the London County Council and to everybody advising them. It was felt that in small buildings it would be rather a stretch of the word "reasonable" if two staircases were provided or asked for, but it was felt at the same time that to have but one door between the possible fire and the only means of escape from the building would be a

somewhat dangerous provision, and that led to an endeavour with the loss of the minimum of floor space to put two doors between a single staircase and the working floors. There was an illustration quite recently of the necessity of something of this kind, and he submitted that it was for architects to solve the difficulty if they could. One did not want to enforce upon owners the expense of providing an alternative means where floor space was so valuable, and he thought when the smoke lobby was devised it was a reasonable and a most economical solution of the difficulty. An illustration of what was required occurred on the 4th of April last at 28 Gun Street, where about forty persons on the top floor of a building possessing a concrete staircase with brick walls and hard-wood doors were prevented from using the staircase for escape owing to one of the staircase doors on the first floor being temporarily out of order just at the time when the fire occurred on that floor, and the majority of the forty persons were therefore not able to leave the building by the means of escape. After all, the Amendment Act was the evolution of professional opinion, especially in regard to the projecting shops, of the witnesses who opposed the Bill. He could not sit down without again repeating the great obligation he felt to Mr. Woodward for the temperate and courteous way in which he had referred to the County Council, and for the way in which he had treated the whole subject of escape from burning buildings.

Mr. MAURICE B. ADAMS [*F.*] said that, with regard to the escape stairways leading to automatically opening flaps or doors which were proposed by the reader of the paper in all domestic buildings in London, it occurred to him that in many cases they would tend very seriously to an increase of burglary. He had professionally to do with the provisions to prevent burglary in connection with one of the largest Metropolitan offices engaged in burglary insurance business, and it seemed to him that it would be a very serious thing to provide indiscriminately a number of iron emergency staircases or iron ladders on the tops of premises over which there must be an absence of proper control. A burglar would be able to escape along a whole range of buildings—in fact, almost a whole street—and down through, perhaps, an unoccupied house. Although he was entirely in accord with the necessity for providing every available means of escape from fire, there were undoubtedly objections to dealing with it in this particular way as suggested by Mr. Woodward.

Mr. JOHN SLATER [*F.*] said he felt quite sure that everyone would be agreed that the people who had the responsibility of protecting persons from death by fire must feel that responsibility very keenly indeed. Again, there was perhaps hardly a person in that room who had had occasion to go into certain buildings in various parts of London who had not come away feeling that they

were positive death-traps. He therefore had very great sympathy with the words that fell from Mr. Riley with regard to his responsibility. But there was undoubtedly a great deal of force in what Mr. Woodward said as to the inadvisability of laying down too hard and rigid lines. Whichever way one looked at it—whether from the point of view of the building owner who wished to put up a building or who had to alter a building, or from the point of view of the County Council in this particular case who had to protect the inmates from fire—surely the safety of thirty-nine people or of nineteen people was very nearly as serious a matter as the safety of forty-one or of twenty-one, and he could not see the object of laying down rigid conditions like this when, whatever the condition laid down, it might operate as a hardship, or on the other hand might be evaded in a way which was almost criminal. Therefore he had come to the conclusion that, with regard to a very large number of the restrictions and conditions laid down by the Amendment Act, it would have been infinitely better to leave the matter in the hands of the County Council or of the District Surveyor to treat each individual case in the way it deserved, because one could not lay down rigid conditions which would fit everything. For instance, Mr. Riley had told them that the Council lay under very great difficulties with regard to carrying out the conditions of the 1894 Building Act because they had no power to vary them. Take the one instance of iron doors. Mr. Riley knew perfectly well that the iron doors were expressly specified, and that it was only in a very round-about side-issue way that he was able to allow what the Council authorities perfectly admitted were better doors for their purpose, the armoured doors. That was only one case of the extreme difficulty and inconvenience of laying down these rigid lines. Mr. Maurice Adams had undoubtedly touched upon a point of very great importance. Take the case of an hotel, with certain exits, and the regulations of the Council that these exits must be only protected by a bolt which could be opened with the slightest pressure from the inside. It was evident that anyone who could open a door without any supervision from the inside in order to get out, could open it for the purpose of letting people in, and in an hotel and in buildings of that sort no supervision whatever could be had over the property of the inmates if there was a means by which any dishonest servant could let confederates into the hotel who might be burglariously inclined. He thought that in respect of this Amendment Act and in respect of many clauses of the original Building Act, it was rather hard lines on an architect who tried in every possible way he could to meet the reasonable requirements—requirements which he admitted to be reasonable—that he was to have cast in his teeth the fact that he must be bound by



regulations which were made for the people who tried to evade them. That was the position in which they were sometimes placed. But before sitting down he should like to say that during the last two or three years he had on a very considerable number of occasions to go to the County Council, and he must testify to the extreme courtesy and consideration with which he had been met by all the officials there. He should like to support the vote of thanks which had been proposed, for Mr. Woodward's Paper was an extremely interesting one, and he had dealt with it in a manner which must have commended itself to all. One other point had been mentioned—viz., with regard to the pessimistic views of the Fire Brigade on some of the very large buildings which were being put up. With regard to these large buildings, it seemed to him that the position in which they were placed was one very considerable element in the consideration as to their danger. If there was a very large building surrounded by narrow streets where it was extremely difficult for the fire engine to get access, then the danger of that building was enormously increased compared with what it would be if it were surrounded by wide streets so that a fire could be attacked from all sides. That was a point which ought to be seriously considered.

MR. G. A. T. MIDDLETON [A.] said he should like to refer to the point raised by Mr. Maurice Adams with regard to domestic buildings, particularly those having eaves, to which Mr. Douglass Mathews had referred, and the difficulty of obtaining access to the roof, and protecting the roof so that it would be possible to travel from building to building. Might it not be possible there, instead of insisting upon access to the roof, to allow of an external balcony, say, at the level of the top floor? Could not just as easy a means of escape be made at that level as at the roof level?

MR. S. HURST SEAGER [A.] (Christchurch, N.Z.) said that in New Zealand they had gone further than the demands of the London County Council; they provided in all hotels and in all factories—all buildings in fact where any large number of people were congregated—a continuous balcony outside each row of windows. All these balconies were connected by iron ladders, and on the lowest story was a ladder which was slightly suspended, so that those who got on to the lowest balcony could easily release the catch and get to the ground. He did not know whether that had been done in London.

THE CHAIRMAN: At the Savoy Hotel you can see it.

MR. S. HURST SEAGER said he had not been there, but in all other hotels and in the one where he was staying there was no such provision. They found it work remarkably well in New Zealand. It should not be optional, but the provision of such a means of escape should be demanded and enforced. In that case there would

be no jamming in staircases, no rushing for one particular outlet; every person had a ready means of outlet from his room to the outside balcony, and so to the street. There was one other point which struck him in reading the London County Council conditions, and he listened carefully to see if any reference would be made to the omission by Mr. Woodward. It seemed to him that in demanding simply certain widths and a certain number of exits a very important omission was made in that there was no provision for preventing blocking at those exits. He had noted this defect twenty years ago, and had commented upon it in the New Zealand papers. Every fire since had only strengthened his view that all the danger lay in the blocking of that exit, whatever its width might be. It would be remembered that in the fire at Chicago the greatest number of deaths took place in a straight corridor some 11 or 12 feet wide, and simply because the architect there had put slight projections on the side of the walls; consequently the human mass in moving along formed, as it were, a living arch, and the people were consequently crushed to death by the pressure which was created by those pushing behind. The same thing might occur at the exit doorway. They had only to look—not at the people coming out in an orderly manner from the various places of entertainment, but they could take an example from people trying to get in in a hurry, and they would find that with a three feet opening seven or eight people were sufficient to block the entrance. The work of architects was to avoid such a possibility of pressure. Without resistance there could be no pressure, and he had devised a method by which a very considerable amount of that pressure was relieved, viz., by putting curved pieces to the doorway, so that the people coming to the doorway from opposite directions would not have the pressure directed against each other; the pressure would be brought on to the curved surfaces, which offering no resistance would enable the people to be gently pushed into the street by those behind. That people in a crowd were carried off their feet was literally the fact, and they had to regard people in the mass trying to get out of a fire, not as living beings having power over their actions, but simply as a mass of people who had no option at all. If there was any resistance there was bound to be loss of life. That seemed to him the most important point to which they as architects should direct their attention, namely, devising methods by which there might be no blocking of the exits. That was a point which the London County Council had as yet taken no heed of. He had a system which it was too late to bring before them that evening, but he hoped to have some other opportunity of doing so.

THE CHAIRMAN said that there was no self-respecting person in London who did not agree with the principle of the Act, and it was perfectly



fair to say that architects, who had not only to consider their responsibility as citizens, but their responsibility as professional men and to their clients, were most scrupulously anxious in designing their buildings to make every provision which was necessary for the escape of persons in the event of fire. He must confess, however, that he was at one with Mr. Woodward in desiring that regulations on the subject should be as elastic as possible. Very frequently, as Mr. Riley had shown, difficulties arose because no discretion was left to anybody, and if there was a proper appeal he thought it would be infinitely easier to deal with the County Council than with the strictly defined words of an Act of Parliament. There were, however, some points in the present Act which he spoke of when giving evidence before the Parliamentary Committee, and which he could not possibly now see his way to commend; for example, the necessity for escape to the roof in a detached house standing in an acre of land. He could not imagine what value there was in it, and it astonished him that that had not been cut out. Who would dream in a house on Hampstead Heath or on Sydenham Hill of going up to the roof of the house when on fire? It was an unnecessary expense to which to put an owner; and also in some cases it was not necessary to insist upon having a staircase, even when there were twenty people in a big house. If there were two staircases, a back staircase and a front staircase, and possibly some other means of escape, it was not necessary in such circumstances to have an iron staircase; it was very often a source of great trouble, and in a place such as he had described such a staircase was most inviting to burglars to go up, and not only to burglars, but to other persons to visit bedrooms where they had no business to be. Mr. Riley had given them a very interesting list of fires where death had resulted, but these related very often to dangerous trades or dangerous premises, and it might be quite reasonable to make laws which should affect such businesses and such dangerous premises, but not to apply to the new buildings which were being constructed in these days of different materials and with different surroundings. He thought that in such cases there might be much greater elasticity. With regard to the ventilating lobby he could not help feeling that there was a much simpler way of getting out of that difficulty. In the case of a factory building or one in which many people were employed, if, instead of having wholly-glazed windows to the staircase, the opening were only glazed half-way up, there would be no danger whatever, because if any fire or smoke got into the staircase it would have an opening to go out by immediately. Personally he had built some large factories in London and he had invariably made his staircases in that manner. The doors would open out to the staircase, and if the window was half glazed and half unglazed every protection was afforded, and there could not under

any circumstances in such a staircase be danger to the persons escaping. The ventilating lobby with its double doors was a much worse thing than if they had simply single doors leading on to the landings. If the suggested practice were adopted he thought it would be an improvement. With regard to the recent hospital report, it might be most useful as a report on the particular hospitals visited, but Mr. Riley would know that every modern hospital was built in the way the report wanted it to be built. He could speak, at all events, from experience; he had put up hospitals all over the country, and he had never built in any other way. They had fire-escape staircases at both ends, fire hydrants all over the place, and everything else, and he should have thought it was the A B C of hospital construction to make such provision. Take the Metropolitan Asylums Board, the largest builders of hospitals in London, there was not a modern hospital of theirs that was not so protected, and had been ever since the Board had been building. With regard to Mr. Seager's suggestion, balconies were, of course, an excellent means of escape from fire, but they were very objectionable from other points of view. A burglar had only to hire a room on one floor to have access to every room in the place when the inmates were out, and they must remember that when legislating against fire there were other dangers to be guarded against. Sometimes it may be said in criticism of the architect that he could make a better provision for fire escape, but it was because of the other dangers which were in themselves almost, if not quite, as important that he did not perhaps do that which was looked upon as ideal from one narrow point of view. He had made these few observations, but he joined with Mr. Slater in saying that his experience of the London County Council had always been that they were reasonable if the case was properly laid before them. If one found initial difficulties he should go to headquarters, when there would be no difficulty in getting any reasonable proposal considered, so far as it could be within the Act. Therefore he cordially supported all that Mr. Woodward had said with regard to the care and attention which was given by the London County Council when matters came before them.

Mr. WOODWARD, in responding to the vote, replied to points raised during the discussion. Mr. Douglass Mathews, he said, had referred to the fact that notices had been served in some cases and nothing had been done; but they should all agree that the London County Council in dealing with this measure had dealt with it in an elastic fashion, and had endeavoured to deal with each case on its merits; and he was quite sure that they, as the Royal Institute of British Architects, would thoroughly agree with that method of procedure. Mr. Riley's statistics were very interesting, and he was much obliged to him for the encomiums he had passed upon the Paper. He had endeavoured

to present both sides of the case, because he felt that they had only to see the charred remains of a fellow-creature to have a very different view from that which they previously held as to the provisions to be made to enable persons to escape from fire. Mr. Slater had emphasised the need for the abolition of the hard-and-fast line. They must have confidence in some authority; and if the constituted authority would only act in a reasonable manner, and cease to regard the Act as applying to *every* building, all friction would be at an end. It was, of course, useless to provide a means of escape in case of fire to the roof of a house in an acre of land. It reminded him of an hotel he had something to do with at Buxton. The authorities would not agree to the opening of this hotel until provision was made by an iron staircase to get on to the roof. That hotel was in the centre of a very large area of land, and at considerable cost they in order to comply with the requirements of the local authority provided this iron staircase. When the work was completed he had to answer the questions of the chairman, a retired lawyer: "Now, Mr. Woodward," he said, "you are perfectly certain you have provided all the necessary means to get on to the roof." "Yes, we have," he replied. "Then," said the chairman, "will you kindly tell me where you

will get to when you have got on to the roof?" That was a poser: the building was too high for a fire escape, and there was probably no fire escape near, and after having expended a considerable sum of money in getting on to the roof he was bound to confess that he did not know how to get off it! Mr. Middleton had referred to external balconies: these had been provided on the different floors in many cases, but that could only be done with the assent of the adjoining owners, and the difficulty was to get that assent. They had all been pleased to hear what had been said by their friend from New Zealand, Mr. Hurst Seager. His remarks with regard to the pressure on openings must commend themselves to every one, and his suggestion of these curved angles at each door might very profitably engage the attention of the London County Council. The Chairman's suggestion of the half-glazed windows was a very good one, because that would remedy the evils resulting from smoke. He was very much obliged for the patience with which they had listened to what might have been, and nearly always was, a dry subject, and he hoped on some future occasion he should have the pleasure of giving them his experiences still further of the working of the Amendment Act of 1905.



9, CONDUIT STREET, LONDON, W., 21st December 1907.

## CHRONICLE.

### H.M. Office of Works and Reinforced Concrete.

The following correspondence has passed between H.M. Office of Works and the Council of the Institute:—

*H.M. Office of Works, Storey's Gate, S.W. :*  
31st July 1907.

SIR,—I am directed by the First Commissioner of His Majesty's Works, &c., to state that this Department is informed that in the opinion of the Local Government Board buildings constructed in ferro-concrete are likely to prove less durable than those of bricks and mortar, and that that Board are re-arranging accordingly the rates at which money is to be advanced for the erection of the first-mentioned class of building.

In view of the foregoing I am to say that Mr. Harcourt would be much obliged if you will be good enough to favour him with the opinion of the Royal Institute of British Architects on the subject.—I am, Sir, your obedient servant,

J. FITZGERALD.

*The President R.I.B.A.*

The foregoing letter was referred by the Council to the Science Standing Committee, and the Committee's report will be found embodied in the following reply of the Council:—

9th December 1907.

*To the Right Hon. Lewis Harcourt, M.P., First Commissioner of Works,—*

SIR,—The Council of the Royal Institute have had under consideration the letter of the 31st July addressed by His Majesty's First Commissioner of Works to the President, stating that, in the opinion of the Local Government Board, buildings constructed of ferro-concrete are likely to prove less durable than those of bricks and mortar, and that the Board are, accordingly, rearranging the rates at which money is to be advanced for the erection of the first-named class of buildings, and requesting the opinion of the Royal Institute of British Architects thereon.

I am directed by my Council, who have adopted the report of the Science Standing Committee to whom the letter was referred, to write as follows:—

The First Commissioner of Works is no doubt aware that the extensive use of reinforced concrete and the exceedingly important part it plays in modern buildings led this Institute to appoint a Committee to consider and report on the subject, and to draw up regulations embodying the essential requirements for permanence and stability. The Institute invited the co-operation of other bodies in the work of investigation, and His Majesty's Admiralty, the War Office, the Institute of Builders, the District Surveyors' Association, and the Association of Municipal and County Engineers were also represented.

This Committee, of which Sir Henry Tanner, of His Majesty's Office of Works, was Chairman, Col. Mayne, R.E., of the War Office, and Professor W. C. Unwin, F.R.S., Vice-Chairmen, after many meetings and discussions drew up a unanimous report setting forth the conditions under which reinforced concrete should be used, and found that under those conditions such work is trustworthy, and that decay of the metal is not to be feared.

This report was adopted at a General Meeting of the Institute specially called to consider it. A copy is sent herewith.

It is impossible to place before the First Commissioner of Works any report of the discussions of that Committee, but some observations on the relative durability may be permitted.

All materials are subject to decay by the influence of the weather, time, and use, bricks and mortar being no exception to the rule.

Improperly made bricks or mortar perish rapidly, and brick buildings are specially subject to fracture from unequal settlement of foundations, or the movements of the soil due to the alternation of wet and dry seasons.

Few buildings are constructed wholly in bricks and mortar; and the wood and iron employed for the floors, lintels, beams, and story-posts, &c., by their decay also produce further destruction.

The dilapidations due to these causes are brought before the architect every time he makes a survey of an old building, and the desire to increase the strength and durability of his work has led during the last fifty years or so to the employment of iron and concrete for floors, roofs, lintels, and other parts on a constantly increasing scale.

The development of this type of construction from simple uses for parts of buildings to its employment to-day for complete structures of all sorts, road and railway bridges, sewers, water mains, reservoirs, jetties, piles, dock walls, coast protection, warehouses, and other buildings, &c., by Governments, municipalities, railway and dock companies, and private owners has been slowly built up step by step by practice and experience,

aided in later years by scientific research, which research in foreign countries has been largely undertaken by the initiative and at the expense of the State.

Concrete (largely employed by the Romans for buildings still existing) is employed to this day in great works requiring undoubted durability. As an instance, we may cite the dams for the reservoirs in the Elan Valley recently constructed for the Birmingham Corporation, work on a large scale which no one would rate as less durable than brick or masonry or indeed otherwise than having an indefinite length of life.

The old concrete had lime as a matrix. Concretes employed for reinforced concrete work are now universally made with Portland cement, a material which is no longer manufactured in an empirical manner, but prepared with all the care which chemical science and highly skilled technical knowledge can bring to bear on it. Its strength and durability are therefore greater and more reliable than heretofore.

Unsuitable material or unskilled preparation in concrete, as in brick or mortar, will undoubtedly lead to failure, but it is to be assumed that proper supervision during construction is employed in concrete structures as in brick, or iron, or steel.

It is sometimes thought that the metal may perish, but all experience shows that concrete is the best preservative for iron or steel known to us. A bar of iron or steel slightly rusty embedded in properly made concrete may be taken out after some months, or after hundreds of years, brighter than when it was put in. Perhaps I may quote an instance—the experience of Mr. Somers Clarke, late Surveyor to St. Paul's Cathedral, who, being anxious as to the condition of the great chain tie which binds the dome at its base, caused an opening to be made in the concrete in which it has been embedded for over two hundred years, and found the iron bright and perfect, notwithstanding the fears which had naturally been felt because of the percolation of water from the gallery over it. This is but one of many examples, showing not only that metal reinforcements and concrete have been used by architects for many years back, but that their confidence in the durability of concrete and metal in combination is justified.

The many instances of the anchor chains of suspension bridges being embedded in concrete as a provision against their deterioration through the action of moisture may also be cited as showing the reliance placed on concrete by engineers for the protection of steel from corrosion.

It is sometimes thought by those who have not studied the question that the lightness of reinforced concrete work, upon which its economy depends, and the small covering of the bars are dangers which time has not yet proved unreal. As showing its durability even in trying cases we may instance the inquiry made by the city of Grenoble in 1901

into the condition of the reinforced concrete water-pipes laid down by the city in 1886. These pipes at the date of the inquiry had been in use for fifteen years. They are of 12 inches diameter,  $1\frac{3}{8}$  inch thick, with reinforcements of  $\frac{1}{2}$ -inch and  $\frac{5}{16}$ -inch diameter. They have required no repair since made, having during that time resisted, and still resisting, without any fissuring or trace of oxidation of the metal or flaw of any kind, a head of water of many feet.

There appears to us to be no more reason to doubt the durability of reinforced concrete in the walls, columns, floors, and roofs of buildings, and basement walls in damp situations, than in retaining walls, piled jetties, bridges, and other engineering structures.

There is also every reason to believe that it is as durable as brickwork or masonry for tanks, reservoirs, and similar structures, resisting the pressure of water under moderate heads, even if there be a slight sweating of water through the concrete, providing the metal is carefully embedded and thoroughly surrounded with concrete of a moderately wet consistency, and especially if the embedded metal has been washed over with a cement grout before being placed in it.

A still more severe test is afforded by works in sea water or works in tidal waters, and by bridges, the piers and abutments of which are exposed to abrasion by running waters. Constructions such as these are more in the province of the engineer, but their behaviour and the opinions practically shown by engineers in ever increasing the use of reinforced concrete are evidences of which we take account.

Though innumerable buildings in England have parts, such as floors, roofs, and lintels, in reinforced concrete, comparatively few have been executed entirely in it, one reason being the difficulty of securing a good artistic result, and another reason that our building by-laws, which fix the thicknesses of walls in nearly all cities, towns, and urban districts, prescribe certain minimum thicknesses for concrete walls, and no reduction is allowed even if strengthened by steel reinforcements. Accordingly there is no advantage gained by the use of reinforced concrete for walls except in the case of railway and dock companies and Government departments not under the control of local authorities. Such bodies have built and are building largely in reinforced concrete.

My Council would call attention to this strange anomaly of public authorities, which employ an economical method of construction and yet practically debar the private citizen from also using it under powers which are conferred for the protection of the public interest.

The accidents and failures which have occurred in reinforced concrete works have not arisen from a want of durability, but have almost invariably taken place when the centres are struck, as,

contrary to experience in other materials, the strength of concretes increases with age. Improper materials and imperfect design which produce failure after completion would equally produce failures in other materials.

My Council are of the opinion that works in reinforced concrete which comply with the requirements laid down in the Report of the Committee appointed by this Institute are at least as durable as brick or stone buildings. They think that any rearrangements of the rates, as suggested in the proposal of the Local Government Board, which would limit the period of loans for reinforced concrete work to less than the period for brickwork would be a mistake, resulting in this country being largely debarred from the advantages of modern and more economic methods of construction employed, not only by foreign countries, but by bodies not requiring the consent of that Board or free from the control of building by-laws.—I have the honour to be, Sir, your obedient servant,

W. J. LOCKE, *Secretary.*

The following acknowledgment has been received from the Hon. Sir Schomberg K. McDonnell, K.C.B., Secretary to H.M. Commissioners of Works and Public Buildings:—

*H.M. Office of Works, &c., Storey's Gate, S.W.:  
11th December 1907.*

SIR,—I am directed by the First Commissioner of His Majesty's Works, &c., to acknowledge the receipt of your letter of the 9th instant, and I am to express to the Council of the Royal Institute of British Architects the thanks of Mr. Harcourt for the valuable report upon reinforced concrete construction with which they have been good enough to furnish him.—I am, Sir, your obedient servant,

SCHOMBERG K. McDONNELL.

*The Secretary R.I.B.A.*

#### Mr. Locke's Retirement from the Secretaryship.

There was a good attendance of members at the General Meeting of the Institute last Monday, and the Chairman, Mr. Edwin T. Hall, *Vice-President*, took advantage of the occasion to say a few words on Mr. Locke's approaching retirement from the Secretaryship. Addressing the Meeting, Mr. HALL said: Gentlemen, before we begin the main business of the evening, I should like to draw your attention to the fact that this is the last general meeting of the Institute at which Mr. Locke will attend as Secretary. As I explained to you at the last Meeting, Mr. Locke has resigned his position in consequence of, I may say, the great success he has attained in another branch of art. (*Hear, hear, and applause.*) I thought you would like at a general meeting of this sort to take leave of him as Secretary, because you will not again have the

opportunity of meeting him here in that capacity, though we hope we shall frequently see him as a visitor. It is hardly necessary for me to make any lengthened reference to Mr. Locke's connection with us; but perhaps it would be fitting for me briefly to touch upon it. He has been with us now nearly eleven years, and, sparing his blushes, I know you will all agree that he has been a most able and courteous Secretary. (*Hear, hear.*) He has been very helpful to us all, and has made himself personally liked by everyone who has come in contact with him. (*Hear, hear.*) But the inevitable has arrived; he must leave us in order that he may shine with brighter light in another sphere. We should not like him, however, to go away without his feeling that this General Meeting, and every General Meeting of the Institute that has assembled here for some years past, has appreciated his work. Members would desire, I am sure, that I should tell him on their behalf that they wish him the very greatest success in that literary branch of art which he has chosen, which he has made his own, and in which he has achieved conspicuous success. (*Hear, hear.*) Therefore, on behalf of all, I would like to wish him every success in the future; we hope we shall see him shine with a very bright lustre, and we shall all be very interested in watching his career. (*Hear, hear, and loud and continued applause.*)

Mr. LOCKE, who on rising was warmly cheered, said: Mr. Vice-President and Gentlemen, it is not without some emotion that one rises to take leave of a body with which one has been connected for so many years as I have been with the Institute as Secretary. It has been a most valued privilege to me as an outsider to come into the very midst of a great profession—to see it in all its aspects, artistic, professional, and social, and to feel that in a kind of way the whole of the profession revolved round me, as the wheels revolve round the axle. It has taught me a great many things; it has brought me into contact with men, which naturally will be of great use to me in the other profession which I have followed and which I am going to follow exclusively henceforward; and it also has brought me a great many friends ever since I came here, a total stranger, nearly eleven years ago. I have been received by everybody, from the President of the Institute to the most newly joined Associate, both here and in the provinces, with uniform consideration, kindness, and courtesy; everyone has held out the hand of friendship; and therefore to leave you now is a matter of great regret and considerable pain. I thank you all for the years you have made so pleasant to me, and I thank you, Sir, for the kind and flattering remarks you have made about my career; and I hope, though I am no longer able to serve you as your Secretary, perhaps by my poor efforts in other directions I may still be able to minister to your edification. (*Hear, hear, and loud applause.*)



### The Flashlight Advertisement Nuisance.

The following letter has been addressed to the Institute:—

14 Buckingham Street, Strand, W.C.

The plague of flashing electric light advertisements and sky signs in our cities at night is on the increase, and seriously threatens the beauty and impressiveness of London, destroying architectural scale and dignity, and vulgarising many of the most striking and interesting spots of our Metropolis. We have recently protested in the public Press against the vandalism of a prominent firm in spoiling a splendid river view by defacing the shot tower by an illuminated advertisement.

The chief offenders in this way are a few large well-known firms, and it becomes a question vital not only to artists, but to everyone who values the architectural beauty and artistic aspects of London, how long we are going to tolerate these insults to the eye. Why should a few pushful firms be allowed to trample on public rights of vision?

There is, however, a worse danger in allowing their continuance, and this is the quite real danger: that the public, growing accustomed to such intrusions, might, from enduring, actually grow to like these dazzling deformities.

We would respectfully urge that united action should be taken on the subject, and beg to suggest that if your powerful and influential body would co-operate with other distinguished artistic associations and the leading societies for the protection and preservation of the public rights in the beauty of historic buildings and places, this gross abuse of advertising could be restrained in the true interests as well as the dignity of the nation by effective legislation.—We have the honour to be, yours obediently,

WALTER CRANE, JOSEPH PENNELL, J. KERR  
LAWSON, T. FISHER UNWIN, SIDNEY LEE,  
D.C.L., HENRY B. WHEATLEY, F.S.A., JANE  
COBDEN UNWIN, OSCAR BROWNING, THOMAS  
SECOCOMBE, J. F. GREEN, G. H. RADFORD,  
M.P., CAPT. THE HON. F. HEMPHILL (Deputy  
Chairman L.C.C.), SIR ROBT. H. HUDSON,  
GEORGE WHALE, A. H. SPOKES, K.C.

The Council have referred the matter to the Art Standing Committee for consideration and report.

### VIIIth International Congress of Architects, Vienna, 1908.

The following announcement has been published concerning the exhibition to be held in connection with the International Congress of Architects, Vienna, 1908:—

“(A) In response to the repeated wish expressed by foreigners, photographs will be permitted as supplementary exhibits, though it is particularly requested that where possible large pictures of decorative treatment be contributed. (B) It is

very desirable that an artist should supplement an exhibit by a book or portfolio containing an illustrated collection of his other executed works. (C) The ‘special conditions’ must in all cases agree with the ‘general conditions.’ (D) 4th May 1908 is the date on which works of art must be delivered in Vienna at the K. K. Gartenbaugesellschaft, Parkring 12.”

### A Technical Bureau for Architects.

Particulars are to hand of the formation of an institution to be known as “The Architects’ Technical Bureau.” Its object is to give expert advice on the many technical requirements of the profession, to supply trustworthy information on new methods of construction, on building materials and appliances, on manufactured goods, and on other matters which architects as a rule can only become acquainted with through the medium of circulars and manufacturers’ travellers. The affairs of the Bureau are to be administered by an Advisory Committee of Architects, representing both London and the Provinces. The Committee at present consist of ten members, of whom nine are Fellows of the Institute—viz.: Messrs. G. Bertram Bulmer (Leeds), Alfred W. S. Cross, M.A., H. L. Goddard, M.A. (Leicester), George Hubbard, F.S.A., Paul Ogden (Manchester), William A. Pite, H. D. Searles-Wood, Edwin Seward (Cardiff), and Keith D. Young. The work of the Bureau will include the carrying-out of scientific and practical tests on materials, specialities, systems of construction, and new inventions associated with building operations. Experts are to be retained to advise on constructional and technical subjects and on legal and such other matters as affect architectural practice. In the Local Materials Department information will be centralised regarding stone, brick, tiles, slates, lime, cement, &c., in various parts of the country, and a standard selection of samples will be available. Copies of the Building By-laws in force in each town and locality will be kept in the Library. Assistance would be afforded to subscribers in obtaining particulars of the site in important competitions that are advertised—information, for instance, regarding aspect, adjoining property, principal roads, accessible materials, and the supply of photographs of adjacent buildings. It is stated that the movement is being well supported, and that the Bureau has already five hundred subscribers. The offices are at 11 Bloomsbury Mansions, Hart Street, W.C., and the Secretary Mr. W. Barker.

### Preservation of Crosby Hall.

The question of the preservation of Crosby Hall was again under consideration at the London County Council meeting last Tuesday. A report was presented by the Local Government Committee stating that, after the discussion which took

place when their report was considered by the Council on 3rd December [see JOURNAL, 7th December, pp. 111 and 112], and as the result of negotiations, they had ascertained that the Government, being anxious to co-operate in the movement for the preservation of Crosby Hall, would be prepared to consider a scheme under which the hall itself might be used for housing the commercial library of the Board of Trade, which the Board were anxious to utilise with greater profit to those commercial interests which were centred in the City of London. It had been subsequently ascertained that the Board would, in addition to using Crosby Hall itself, desire to obtain in the immediate vicinity other accommodation for purposes closely associated with those just mentioned. These negotiations found definite expression in a letter received from the Board of Trade on 13th December. The Committee felt that the action of the Board introduced a new and important element into the consideration of this question: a substantial tenant, presumably willing to take the property for an indefinite period, was assured, and under conditions which would give that access to the historical building which the Council and the public required.

In the negotiations which had taken place and at the conference last Monday the Committee thought it had been made clear that further proceedings would be rendered practically impossible if the Council adhered to the exact terms of its resolution of 3rd December. The Committee maintained the position which they took up at the outset. Whilst they were not prepared to recommend that any charge should be thrown on the rates in respect of the purchase of Crosby Hall, they realised that if they were to negotiate successfully with the directors of the bank and others concerned, a certain sum of money would have to be raised as part of the purchase price. The Council could hardly ask the City Corporation and others to join in a movement of that character unless it was prepared to act with them on equal terms. They had therefore decided to ask the Council to waive the conditions under which any scheme must avoid the incurrence of capital expenditure. They were not without hope that if such an alteration was made in the resolution of 3rd December they might be able to negotiate satisfactorily with the bank directors, the Government, the City Corporation, and the Preservation Committee, and ultimately to submit, for the consideration of the Finance Committee and of the Council, proposals which, while avoiding any charge upon the rates, would secure the preservation of the hall on its present site, and at the same time result in the acquisition of a centre of commercial information which would be of the greatest advantage to London. Various alternative sites were under their consideration, but they were not in a position to report on them, nor would it be desirable for them to do so until after the views of the bank

directors had been ascertained. The fact that that meeting of the Council was the last meeting before the recess was their justification for approaching the Council at such short notice; and, further, the bank directors had made it quite clear to them that some definite proposal from a responsible authority must be submitted to them immediately if they were to refrain from demolishing the hall. They recommended:—

"(a) That the resolution of 3rd December 1907, with reference to Crosby Hall, be rescinded.

"(b) That the Local Government, Records, and Museums Committee be authorised to ascertain whether the Corporation of the City of London will co-operate with the Council in securing the site of Crosby Hall, and whether the Crosby Hall Preservation Committee will obtain the consent of the subscribers to the preservation fund to transfer their subscriptions to the Council in order to assist in carrying out the scheme which may be hereafter agreed upon; that the Chartered Bank of India, Australia, and China be informed of the strong desire of the Council and the City Corporation to preserve the hall on behalf of the public, and of the assistance which the President of the Board of Trade is prepared to render in the matter, and be invited to surrender their purchase of the whole or part of the site on suitable terms to be agreed upon; that the Local Government, Records, and Museums Committee be authorised to enter into such negotiations with the various authorities and persons concerned, as may be necessary to provide a complete scheme for the preservation of the hall, and that the scheme shall not allow for any charge being made upon the rates, and shall be reported to the Finance Committee and be submitted to the Council for its approval and sanction before the Council is committed to any action thereon."

The recommendation to rescind the resolution of the 3rd December [JOURNAL, 7th Dec., p. 112] was carried.

On the second recommendation, on the motion of Lord Midleton, it was agreed to add after the words "Museum Committee" the words "in consultation with the Chairman of the Finance Committee."

It was further resolved by 59 votes against 49 to add after the word "rates" the words "shall be conditional on the City Corporation being willing to co-operate in providing the purchase-money."

## ARCHITECTURAL REFINEMENTS.

Palais du Trocadéro, Paris : le 14 Déc. 1907.

À M. le Rédacteur du JOURNAL R.I.B.A.,—

MONSIEUR,—Une polémique entre deux de mes amis, M. Goodyear et M. Bilson, vient de paraître dans votre estimable Revue, et le premier de ces messieurs m'a fait l'honneur d'invoquer mon nom conjointement avec celui de M. Choisy à l'appui des idées qu'il professe sur les déformations intentionnelles de l'architecture au moyen-âge.

Je vous serais reconnaissant si vous vouliez bien accueillir dans votre revue les quelques lignes que je vous adresse, car je désirerais vivement éviter que vos lecteurs me considèrent comme un partisan des idées de M. Goodyear, qui, à mon avis, a généralisé des remarques qui ne doivent s'appliquer qu'à un petit nombre d'exemples, et s'est mépris sur la portée d'autres constatations.

Je ne rétracte aucunement ce que j'ai dit dans le passage cité par M. Goodyear à la p. 20 de votre numéro du 9 novembre, car, dans les exemples que je cite, les déformations sont régulières et de nature à produire un effet qui a son intérêt; les supposer intentionnelles n'est point absurde. Il en est tout autrement d'autres cas et surtout de ceux où la cause fortuite des déformations est évidente: à Notre-Dame de Paris, poussée des voûtes et affaissements du sol humide; à Pise, affaissement simultané de la tour et de la partie voisine de la cathédrale, par suite de la même dépression du sol; à Saint-Quentin, malfaçons, etc. Voici, du reste, ce que j'écrivais l'an dernier à M. Bilson:

"J'ai la plus grande estime et la plus grande sympathie pour M. Goodyear, et il a publié des travaux pour lesquels j'ai aussi une grande estime, mais il m'est impossible de me rallier aux conclusions qu'il a dernièrement émises au sujet des déformations intentionnelles de l'architecture du moyen-âge. J'ai dit au commencement de mon *Manuel d'archéologie française*, dès avant ces publications, dans quelle mesure je crois à ces 'refinements' et à ces déformations voulues, qu'il faut, c'est ma conviction, limiter à un très petit nombre d'applications ou à un très petit nombre d'édifices. En aucun cas, je ne saurais admettre la manière de voir de mon ami M. Goodyear au sujet de l'église de Saint-Quentin et de la cathédrale d'Amiens, dont l'histoire est connue, et contredirait ses conclusions, à supposer que l'examen seul de ces édifices n'y suffise pas. Dès longtemps je le lui ai dit—et je vous autorise à répéter—que telle est ma conviction absolue, et que je suis pleinement d'accord avec vous comme avec mon confrère et ami M. Georges Durand sur la façon dont il convient d'expliquer les déformations de la cathédrale d'Amiens."

En vous remerciant d'avance si vous voulez bien publier cette lettre, je vous prie, Monsieur, d'agréer l'expression de ma considération la plus distinguée.

C. ENLART.

23 Rutland Square, Edinburgh :  
9th December 1907.

To the Editor JOURNAL R.I.B.A.—

SIR,—In your issue of 23rd November Mr. E. S. Prior asks for a guide to the essential points of Mr. Goodyear's theory. Before me lies an *Architectural Review* for February 1906, an article in which I can recommend as excellent for the purpose. I extract one sentence from it. "His [Mr. Goodyear's] are the first steps to a scientific understanding of what his measurements and photographs triumphantly show to be accessory to so much of the ancient beauty of architecture." The writer of the article appears to be Mr. Prior himself.

Instead of controversy as to extreme limits of Mr. Goodyear's theories can we not rest on such solid ground as that? May we not without labelling ourselves as partisans be grateful to Mr. Goodyear for calling attention to facts of high interest hitherto neglected? It is not necessary to accept all Mr. Goodyear's explanations of these facts, but the actual phenomena are there, and most of us will acknowledge that we never realised the whole significance of them till we came across Mr. Goodyear's researches. Irregularities we all saw; but how many of us noticed those strange regularities in irregularities which involve the closest correspondence in varying parts of the same building—e.g., opposite arcades or diminishing height of arch crowns? Not I for one. My own feeling is that everyone interested in building has had opened up to him by Mr. Goodyear's work a new and deeply interesting sphere for observation.

Mr. Prior of all men would, I should have thought, appreciate this. The other day I made a little pilgrimage to his church at Monkwearmouth, and if ever there were refinements (but not with a big R please, Mr. Printer) they are there. In the exterior a splendid choice and treatment of material, so that the church looks almost like one of the rocky headlands of the coast it stands on, and a fine harmony of colour between walls and roof. In the interior a use of principal arches in the nave, which is of much significance, and a masterly effect gained by the converging arches across the transepts with a tapering chancel. Is it impossible to conceive that what Mr. Prior does in one way with intention and success the earlier men with all their wealth of tradition and skill of workmanship did in others? And are the two really so far apart? I do not believe it, and I think everyone ought to look into the facts Mr. Goodyear has got together, and later on they may accept or reject his theories.—I am, Sir, yours faithfully,

F. W. DEAS.

## LEGAL.

## Architect : Negligence : Damages.

KEYSER T. TRASK AND SONS AND ANOTHER.

This was an action heard in the King's Bench Division before Mr. Justice Darling and a Special Jury on the 5th, 6th, and 9th December, to recover damages for alleged breach of contract, or in the alternative for negligence.

Mr. Acland, K.C., Mr. Morton-Smith, and Mr. R. F. Colam were for the plaintiff; Mr. Foote, K.C., and Mr. C. A. S. Garland for the defendants Trask and Sons; Mr. Salter, K.C., and Mr. G. Stuart Robertson for the defendant Webb. The following report is abstracted from *The Times* of the 6th and 10th December :

Mr. ACLAND in his opening statement said that the plaintiff, Mr. Charles Edward Keyser, desired to build a chapel for the Freemasons' schools at Bushey, and he employed the defendant, Mr. Edward Doran Webb, an architect, of Salisbury, to prepare the plans and estimate. Mr. Webb was aware that the walls were to be painted by Mr. Newman, a well-known mural painter of ecclesiastical subjects. The plaintiff entered into a contract with Messrs. Charles Trask and Sons, builders, of Norton-sub-Hamdon, in Somerset, who were to build the chapel to the satisfaction of Mr. Webb at a cost of £5,906. The walls, it was complained, had been so badly built that they leaked so as to destroy Mr. Newman's paintings. The specification provided that the walls were to be of solid brick, with a flint facing, and to be brought to a surface fit to be painted upon, the plastering to be executed in good chalk lime. The work was commenced in May or June 1900. The architect had undertaken to superintend the execution of the work, and the plaintiff claimed that it was the architect's duty to exercise proper supervision to prevent seeping, but that he had not done. In 1904 the damp began to show itself, and the paint peeled off Mr. Newman's paintings so that they were ruined. It was then discovered that the wall was not of solid brick, but contained a quantity of rubbish.

The plaintiff gave evidence in support of his counsel's opening. In cross-examination, he said that he supposed Mr. Webb must have been satisfied, else he would not have given the final certificate. The final payment was in May 1902.

Mr. Andrew W. Anderson, an architect, of Watford, stated that the walls were stripped under his supervision. The paintings had suffered from damp, and he found that flint chippings, broken brick, and ground ashes, without any bond, had been put into the walls, which were so built that the water could soak in and remain there. The interior of the wall was filled with water.

In cross-examination he said that it was not possible to have perfect contact between the bricks and the flints, and the space ought to be filled up with flint chippings and mortar.

J. H. Munday, the foreman on the job, stated that as soon as they took the flints off the outside the rubbish fell out on the scaffold.

Mr. Philip H. Newman, the artist, said that chalk lime, if dry, afforded a good surface for painting. He thought a period of two years was long enough for it to become dry. His attention was called to blotches which were due to moisture, and ultimately the paint flaked off. The damage to the paintings was due to the wet getting through the walls. The minimum damage was £200.

At the close of the plaintiff's case,

Mr. FOOTE submitted that there was no case against the builders, as they had satisfied the architect.

The JUDGE declined to stop the case, as that point could be raised after the verdict.

Mr. FOOTE, in addressing the jury, submitted that where a contractor had done his work to the satisfaction of an

admittedly honest architect, a jury should be very slow to interfere. The original specification provided for cement, but this was altered to mortar. The former was better adapted for painting and it dried quicker. There was a clerk of works employed by the plaintiff to see that the work was properly done, and Mr. Webb's representative was there for the same purpose.

Mr. Charles James Trask, a member of the defendant firm, stated that he visited the work about once in three weeks. His managers visited it between his visits. He had never seen rubbish packed inside the wall. Cross-examined, he said that the walls were finished in December 1900. He could not explain why, in the case of the north wall, on which the paintings had been finished after the wall had been re-faced, the paintings were not spoiled, whereas in the case of the south wall, on which they had been finished before the wall was re-faced, they were spoiled.

Mr. Ernest G. Williams, the London representative of Messrs. Trask and Sons, said that he thought the wall had never really dried, and the paint was put on too quickly.

Mr. Micklewright, assistant manager to Messrs. Trask, said that he did not see any space filled with rubbish between the bricks and the flints. Such a wall as had been described would not have stood the weight of the roof.

S. Clarke, the foreman, said the bricks in these 22-inch walls were 14 inches thick; there could never have been in any place as little as 4½ inches of brick, nor could the average have been 9 inches only. Some foreign stuff, shown the witness, he said looked as if it came from a dust-cart, but he never got his material for the work in that way. Whenever he took down a building it always had the appearance of having been made of rubbish. The clerk of the works made no complaints to him about the mortar or building.

Cross-examined—He represented Messrs. Trask. He had nothing to conceal. Some bricks inside may have been rather soft, but they were all right if not exposed to frost. He had written he would not have liked to risk many of them outside. He wrote to Messrs. Trask "he never let the plaintiff see any more than he possibly could." He could not say why he wrote that. It was too long ago. It was not that he had anything to conceal. He had written he was "well watched, but he was up to those sort of people," referring to the clerk of works. He had added the clerk could not catch him asleep, but was on to the men if the witness chanced to move. He could not say what he meant. He had to write to his master, and he could not send a blank sheet. If the mortar had been bad and the bond not properly done, the building would have fallen, and he would not have been in Court to tell this tale.

Re-examined—The clerk approved of the bricks used. He was very sharp.

Two bricklayers gave evidence that the brickwork never fell to 4½ inches only, and that the work was properly done.

Mr. E. G. Verity, a surveyor, said that a wall such as described by Mr. Anderson would scarcely, in his opinion, have supported the roof. Cement would have dried quicker than the chalk lime used. The lime in the chalk lime, when damp, was very injurious to paintings.

Cross-examined—He did not think that the flint surfaces in the interior ought to have been dripping with water four years after the building. That might have been caused by water from outside, or perhaps by the moisture in the mortar. The first was most probable. Water might enter holes in the wall, if such existed. He had made his calculation about the weight to be carried by the walls on a wrong basis, as he now found they did not carry the whole weight of the roof.

Re-examined—He did not think any painting should have been done on these walls within four years of their erection.

Mr. SALTER submitted there was no case as to negligence by Mr. Webb either as to the building of the apse walls or as to giving the final certificate.



His LORDSHIP said he should leave it to the jury to say whether it was negligent of Mr. Webb to advise Mr. Newman that he might paint on the walls two years after their erection.

Mr. E. Doran Webb, the architect, said he attended about every seventeen days during the progress of the work. There was no difficulty about the building of the apse walls. He thought the painting did not stand because a south wall, where it was done, was always damper than others, and he thought this wall had not dried completely. Chalk lime took longer to dry than cement. At the time of signing the contract, he did not know Mr. Newman was to do painting, and he did not tell him that the walls would be fit for painting two years after erection for the autumn of 1901; he told Mr. Newman it would be two years at least before any wall-painting or decoration could be done. In the summer of 1902 he was surprised to hear painting had been begun. If there was only  $4\frac{1}{2}$  inches of brick, the building would have collapsed.

Cross-examined—Bad work, such as mentioned in Mr. Anderson's report, ought to have been noticed, if it had existed. He did not notice it, though he inspected the work regularly.

Mr. Leonard Stokes said that evaporation of moisture would be retarded if the outer surface were flint rather than brick.

Cross-examined—There was a common idea that a wall was dry after two years. If a wall were full of rubble, as Mr. Anderson reported, that would tend to spoil the paintings. He thought the photograph of the wall contradicted the report. He had not seen the work itself.

Further evidence was given that two years was a usual period to leave a wall before painting on it.

His LORDSHIP, in summing up, said that Mr. Webb and Mr. Newman had, previous to this matter, done work for Mr. Keyser at Aldermaston in decorating the church there, so that Mr. Webb knew the kind of work proposed to be done at Bushey by Mr. Newman, and Mr. Newman was aware of the requirements for the work. At Christmas 1900 the apse walls were done. The painting began in July 1904, before which Mr. Newman applied a drying preparation. No one had blamed Mr. Newman. Damp came out and spoiled part of the painting after a good deal had been done, and it had to be renewed. The plaintiff had to show why this had occurred. Was it proved that it was because of failure to follow the specification? This method of building with brick and flint was not unusual. The interstices between should have been filled in with flint chippings. The space should not have exceeded 2 inches or 3 inches. Was the space filled with improper material? Mr. Anderson was employed by Mr. Keyser to make a report on the work, as there had been some dispute between Mr. Webb and Mr. Keyser. Mr. Webb made his last visit in January 1902, and gave his last certificate in May 1902. The jury must form their own opinion on Mr. Anderson's evidence. Mr. Anderson gave his report on May 7, 1906, to Mr. Keyser. Mr. Keyser told Messrs. Trask on the 8th that he was having an examination of the building made by Mr. Anderson and invited them to come to Bushey and see the condition of things. Messrs. Trask repudiated liability, and did not accept Mr. Keyser's suggestion on the 15th to come and see Mr. Anderson on the spot and to ask Mr. Webb to come also, but said they could send a representative on the 29th, and did not propose to communicate with Mr. Webb, as they had had some dispute with him about some other work. The repairs were accordingly done without their presence. It was now said that the paintings were not hurt by the work being badly done, but by the paintings being applied too early. Which account did the jury prefer? Should not Messrs. Trask have sent someone to see if Mr. Anderson's report were well founded? Should Mr. Webb have seen that the building was badly done? Was the specification fol-

lowed or not? If the work was badly done, should Mr. Webb have found it out? As to damages, it had cost about £117 to make the walls good. To put the paintings right would cost £200. Was this expenditure reasonable?

The jury found a verdict for the plaintiff against both defendants, £100 against Mr. Webb, and £217 against Messrs. Trask & Sons. The £100 payable by Mr. Webb to be divided into £32 for repair to the wall, and £68 for the necessary repainting; the £217 payable by Messrs. Trask & Sons to be divided into £65 for repair to the walls, and £152 for the repainting.

Mr. GARLAND submitted that the damages against Messrs. Trask for repainting were too remote.

His LORDSHIP overruled the objection, and entered judgment accordingly.

## MINUTES. IV.

At the Fourth General Meeting (Ordinary) of the Session 1907-08, held Monday, 16th December 1907, at 8 p.m.—Present: Mr. Edwin T. Hall, *Vice-President*, in the Chair; 40 Fellows (including 7 members of the Council), 48 Associates (including 1 member of the Council), and numerous visitors.

Upon the Minutes of the previous Meeting (2nd December, JOURNAL, p. 105) being put for confirmation, Mr. H. Hardwicke Langston [A.] objected that the Minute respecting the amendment which he had asked leave to bring forward (p. 106), and which the Chairman had ruled could not be entertained as the notice required under the By-laws had not been given, was by inference inaccurate, inasmuch as the business to be brought before that Meeting, and to which his proposed amendment related, had not been announced in sufficient time for the required notice to be given, and that consequently such Minute ought to be amended or expunged. The Chairman stated that the Minute in question accurately recorded what had transpired, but that Mr. Langston's protest should be entered on the Minutes of the present Meeting. Thereupon the Minutes, having been taken as read, were passed and signed as correct.

The Hon. Secretary announced the decease of Edward Morgan Whitaker, *Associate*, elected 1882.

The following members attending for the first time since their election were formally admitted by the Chairman—viz., Ralton Gardner Hammond and Robert Cuninghame Murray, *Fellows*.

The Secretary announced that the following candidates had been nominated for election—viz., AS FELLOW: Samuel Hurst Seager [A.] (Christchurch, N.Z.); AS ASSOCIATE: Walter Godfrey Green.

The Chairman referred to the approaching retirement of Mr. W. J. Locke from the Secretaryship, and having given expression to the feelings of personal regard in which he was held by members, and their appreciation of his valued services as Secretary, wished him on behalf of the General Body success in his future career.

The Meeting having warmly endorsed the Chairman's remarks, the Secretary expressed his acknowledgments for the unvarying kindness and consideration he had experienced from members and his deep concern at severing his connection with the Institute.

Mr. Wm. Woodward [F.] read a Paper on RECENT FIRE LEGISLATION FOR LONDON UNDER THE FACTORY AND WORKSHOP ACTS OF 1895 AND 1901, THE LONDON BUILDING ACT 1894, AND THE AMENDMENT ACT 1905.

The Paper having been discussed a vote of thanks was passed to Mr. Woodward by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.



